

REMARKS/ARGUMENTS

Claim 10 is cancelled; Claims 11-21 are new.

Support for each new and amended claim is found at the originally filed specification, that includes the originally filed claims. Additionally, support for the amendment of present Claim 1 is found, for example, at originally filed Claim 5. Support for amended Claim 5 is found, for example, at page 6, lines 27-29, of the originally filed specification. Support for Claims 11-14 is found, for example, at page 7, lines 14-25, of the originally filed specification. Support for new Claim 15 is found, for example, at page 7, lines 1-25, of the originally filed specification. Support for new Claims 16-17 is found, for example, at page 6, lines 31-36; and at page 7, lines 7-12, of the originally filed specification. Support for new Claims 18-19 is found, for example, at page 12, lines 19-23, of the originally filed specification. Support for new Claims 20-21 is found, for example, at page 10, lines 13-17, of the originally filed specification.

No new matter is added.

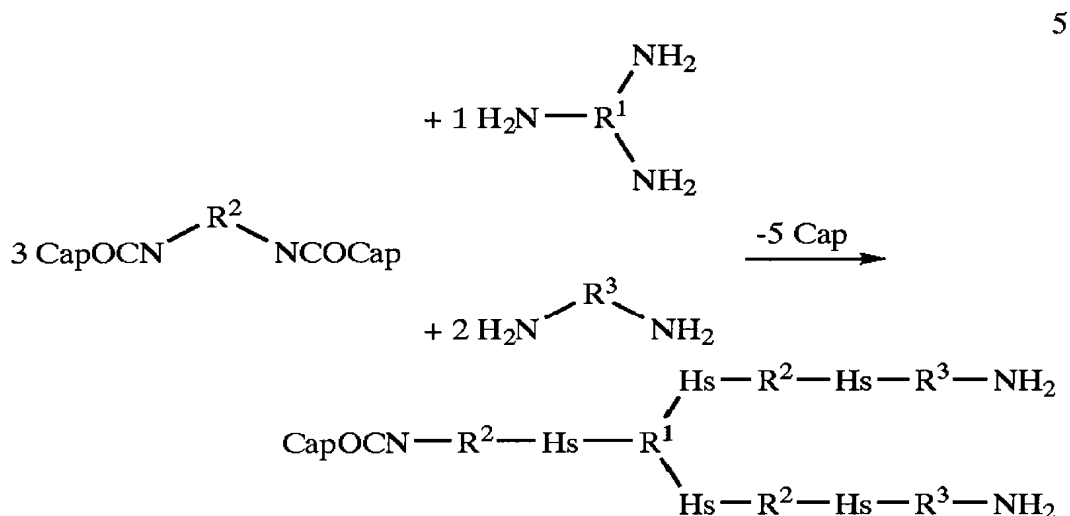
The indefiniteness rejection of Claims 1-9 is obviated by replacement, in Claim 1 and 9, of the phrase “high-functionality highly branched polyureas” with the term “a functionalized, branched polyurea.” Withdrawal of the rejection is respectfully requested.

The non-stutory obviousness-type double patenting rejection of Claim 9 as being unpatentable in view of Claim 9 of U.S. 7,176,271 (‘271) is respectfully traversed, because Applicants submit different processes produce different ureas that are patentably distinct.

Present Claim 9 is drawn to a functionalized, branched polyurea prepared by the process of present Claim 1. Present Claim 1 is drawn to a process for preparing a functionalized, branched polyurea. The present Claim 1 process consists of reacting at least one urea, at least one thiourea, or a combination thereof with at least one amine having at least three primary and/or secondary amino groups, and optionally, at least one amine having

at least two primary and /or secondary amino groups, to form the functionalized, branched polyurea. Any amine or combination of amines reacted with the at least one urea, at least one thiourea, or a combination thereof, has an average amine functionality of from 2.1 to 10. In the process, optionally, the reacting is conducted in the presence of a solvent; optionally, the reacting is conducted in the presence of at least one catalyst; optionally, an amine liberated during the reacting is separated off by distillation; and optionally, the functionalized, branched polyurea is, post formation, subject to a subsequent functionalization.

'271 is drawn to "[a] process for preparing high-functionality, highly branched polyureas...comprising the steps [of] a) reaction of an at least bifunctional capped diisocyanate or polyisocyanate with at least one bifunctional primary and/or secondary amine with elimination of the capping agent, [and] b) intramolecular reaction of the reaction product from step a) to form a high-functionality, highly branched polyurea" (see the Abstract of '271). '271's process is exemplified in columns 5-8 of '271. For example, in paragraph 46 of '271, the following reaction is described:



In the reaction, a capped diisocyanate that introduces an aliphatic, aromatic or araliphatic  $R^2$ , is reacted with one or more (in this case two) polyamines that introduce an aliphatic, aromatic, or araliphatic  $R^1$  and  $R^3$ . The urea bond is formed by reaction of the capped NCO group and the (in this example) primary amino groups of the two primary amines. Thus, the high-functionality, highly branched polyureas produced by the process of '271 always contain a radical  $R^2$  between ureas joining the primary amines.

In contrast to the process of '217, the process of present Claim 1, as described above, reacts at least one urea, at least one thiourea, or a combination thereof with at least one amine having at least three primary and/or secondary amino groups, and optionally, at least one amine having at least two primary and /or secondary amino groups, to form the functionalized, branched polyurea. In the process of present Claim 1, two amino groups are directly linked via a urea bond (see pages 9-11 of the originally filed specification), and thus, no radical equivalent to  $R^2$  in '271 is present in the urea of present Claim 9, that is made by the process of present Claim 1.

Because the ureas of Claim 9 of '271 require the presence of an  $R^2$  radical, and the ureas of present Claim 1 do not include this radical, Applicants submit the ureas of present Claim 9 and '271's Claim 9 are different, and that the urea of present Claim 9 is therefore patentably distinct. Withdrawal of the rejection is respectfully requested.

The obviousness-type double patenting rejection of Claim 9 as being unpatentable in view of Claim 9 of co-pending U.S. Application No. 10,578,186 is respectfully traversed. To address the rejection, Applicants have filed, along with this paper, a Terminal Disclaimer. Withdrawal of the rejection is respectfully requested.

The anticipation rejection of Claims 1-9 as being unpatentable in view of Osterloh is respectfully traversed.

Osterloh is drawn to “[a] precursor for the preparation of urea condensates and the preparation of heat-curable surface coatings” (see the Abstract of Osterloh). “To prepare these urea condensates, primary di-and/or polyamine is reacted with a urea, a secondary monoamine and a polyalcohol which contains certain groups at elevated temperatures and in the presence of absence of a catalyst, and the ammonia formed is separated off” (see the Abstract of Osterloh). In contrast to Osterloh, as described above, the process of present Claim 1 consists of reacting at least one urea, at least one thiourea, or a combination thereof with at least one amine having at least three primary and/or secondary amino groups, and optionally, at least one amine having at least two primary and /or secondary amino groups, to form the functionalized, branched polyurea. Any amine or combination of amines reacted with the at least one urea, at least one thiourea, or a combination thereof, has an average amine functionality of from 2.1 to 10.

Applicants respectfully submit that Osterloh is different from present Claim 1 and the claims depending therefrom in at least two ways. First, Osterloh requires the presence of a polyalcohol as a reactant, and present Claim 1 does not contain the polyalcohol reactant of Osterloh. Because Osterloh requires the presence of the polyalcohol reactant, and present Claim 1 excludes the polyalcohol reactant, Applicants submit that Osterloh, taken as a whole, “teaches away from” excluding a polyalcohol reactant as found in present Claim 1 and the claims depending therefrom. Secondly, as required in present Claim 1, any amine or combination of amines reacted with the at least one urea, at least one thiourea, or a combination thereof, has an average amine functionality of from 2.1 to 10, and this feature is not described or suggested by Osterloh. Because Osterloh does not describe or suggest all of

the features of present Claim 1 and the claims depending therefrom, and in fact “teaches away from” excluding a polyalcohol reactant as is done in present Claim 1 and the claims depending therefrom, Osterloh cannot anticipate present Claim 1 and the claims depending therefrom. Withdrawal of the anticipation rejection is respectfully requested.

The obviousness rejection of Claim 3 as being unpatentable in view of Osterloh is respectfully traversed. Present Claim 3 depends from present Claim 1. As described above, Osterloh does not describe or suggest all of the features of present Claim 1, and in fact, “teaches away from” a feature of present Claim 1. Accordingly, Applicants submit that present Claim 3 cannot be obvious in view of Osterloh. Withdrawal of the obviousness rejection is respectfully requested.

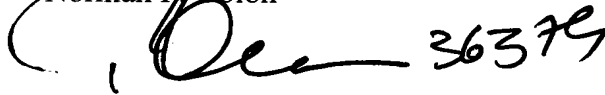
The obviousness rejection of Claim 4 as being unpatentable in view of Osterloh and Coran is respectfully traversed. Present Claim 4 depends from present Claim 1. As described above, Osterloh does not describe or suggest all of the features of present Claim 1, and in fact, “teaches away from” a feature of present Claim 1. Conan, whom the Office relies upon to teach “substituted ureas and depending on the substitution the resulting urea will exhibit a different reactivity” (see page 6 of the Official Action) does not cure the deficiencies of Osterloh. Withdrawal of the obviousness rejection is respectfully requested.

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Applicants submit the present application is now in condition for allowance. Early notification to this effect is earnestly solicited.


Respectfully submitted,

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